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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,415	10/12/2000	Bo Deng	BD 99-1-1R	7633

23531 7590 06/18/2004

SUITER WEST PC LLO
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SUITE 220
OMAHA, NE 68154

EXAMINER	
GHULAMALI, QUTBUDDIN	
ART UNIT	**PAPER NUMBER**
2631	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/689,415	DENG, BO	
	Examiner	Art Unit	
	Qutub Ghulamali	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 10-14 are withdrawn from further consideration pursuant to 37 C.F.R. 1.142(b), as being drawn to nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the election requirement in Paper No. 6. Applicant's election with traverse of claims 1-9 in the reply filed on 03/25/2004 is acknowledged.

The traversal is on the ground(s) that claims 10-14 is generic to the species of Figures 1-16, 19-21. This is not found persuasive because the examiner did not identify, Figure 1 as a separate species. The examiner believes applicant intended to describe claims 10-14 as generic to first species depicted in Figures 17 and 18. This argument regarding generic claims would be accepted.

The requirement is still deemed proper and is therefore made FINAL.

Specification

2. Claim 2 is objected to because of the following informalities:

Claim 2, line 1, after "coded output", --signal-- should be inserted.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Szczutkowski (US Patent No. 5,051,991) in view of US Patent 6,262,678 to Sarpeshkar.

Consider claims 1, 3, 9, Szczutkowski discloses a transceiver (repeater) (fig. 1), a sub-band coder/decoder wherein a means for separately coding the input digital signals in each sub-band channel in order to provide compressed coded signal in a receiver, transmitting said coded output signal to a receiver, a decoding means connected to receive sub-band channel for separately decoding the time delayed digital signals (abstract; col. 7, lines 45-67; col. 8, lines10-25). Szczutkowski however, fails to disclose spike burster converting the output signal into spike burst and into an output signal corresponding to input signal. Sarpeshkar discloses a spike based hybrid machine (figs. 2, 3, 12, 13) include so called neuron circuits for accumulating analog current signals over a period of time and the generation of fast-rising spiking signals converting spikes as output signal (col. 2, lines 10-15, 25-30; col. 4, lines 64-67; col. 5, lines 1-5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Szczutkowski's transceiver to include spike burster converting the output signal into spike burst and into an output signal corresponding to input signal as to

achieve important performance and flexibility advantages in reproduction quality as taught by Sarpeshkar.

Regarding claims 5-8, Szczutkowski discloses features of the claimed invention as discussed above, but fails to disclose arbitrary logic functions such as activation and deactivation regions for the spikes. Sarpeshkar discloses activation and transitions of states for the neuron firings (spikes) during the up count and down count of spikes by the counter (figs. 9, 10, 11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Szczutkowski's transceiver to include spike burster with transitions of activation for the spikes so as to achieve spike activation as taught by Sarpeshkar (col. 16, lines 46-51; col. 17, lines 1-17).

Regarding claim 2, Szczutkowski discloses a suitable encoding algorithm (e.g. adaptive pulse code modulation, adaptive differential pulse code modulation, block companded pulse code modulation, etc.) (col. 2, lines 18-23).

Regarding claim 4, any conventional circuit may be used in the transmit/receive interface may employ the clock recovery circuits in a non-linear fashion.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kober et al (US Patent 6,252,535), Szczutkowski et al (US Patent 4,757,536) are cited as arts of reference showing acquisition of noise encoded waveforms.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (703) 305-7868. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 703 306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.
June 15, 2004

TEMESGHEN GHEBRETINSAE
PRIMARY EXAMINER
6/15/04